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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>A61K 39/00, C12Q 1/68, G01N 33/68</b>		<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 99/64064</b>
			<b>(43) International Publication Date:</b> 16 December 1999 (16.12.99)
<b>(21) International Application Number:</b> PCT/CA99/00437		<b>(74) Agents:</b> COTE, France et al.; Swabey Ogilvy Renault, Suite 1600, 1981 McGill College Avenue, Montreal, Quebec H3A 2Y3 (CA).	
<b>(22) International Filing Date:</b> 13 May 1999 (13.05.99)			
<b>(30) Priority Data:</b> 09/090,567 8 June 1998 (08.06.98) US		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
<b>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application</b> US 09/090,567 (CIP) Filed on 8 June 1998 (08.06.98)		<b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
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<b>(75) Inventors/Applicants (for US only):</b> SULLIVAN, Robert [CA/CA]; 3261 Chemin St-Louis, Ste-Foy, Québec G1W 1S1 (CA). BERUBE, Bruno [CA/CA]; 76 du Buisson, Loretteville, Québec G2A 1M7 (CA). LEGARE, Christine [CA/CA]; 294 Paquet, St-Rédempteur, Québec G6K 1M3 (CA). GAUDREAU, Christian [CA/CA]; Appartement 7, 710 Horizon, Ste-Foy, Québec G1V 2X7 (CA).			
<b>(54) Title:</b> ACROSOMAL SPERM PROTEIN AND USES THEREOF			
<b>(57) Abstract</b> <p>The present invention relates to an acrosomal sperm protein for use in immunocontraception of male and female subjects and as a marker for fertility. The present invention provides a method of immunocontraception of a male or female subject, which comprises administering an antigenic fragment of a P34 protein showing a high specificity for the P34 to the subject to elicit an immunocontraception response by the subject. An immune response against the peptide occurs without side effects. Probes and diagnosis kits for male or female infertility are also provided.</p>			

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 99/00437

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A61K39/00 C12Q1/68 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 40386 A (IMMUCON INC) 30 October 1997 (1997-10-30) the whole document ---	5-8
Y	BOUE F ET AL: "HUMAN SPERM-ZONA PELLUCIDA INTERACTION IS INHIBITED BY AN ANTISERUM AGAINST A HAMSTER SPERM PROTEIN" BIOLOGY OF REPRODUCTION, US, ORLANDO, FL, vol. 51, no. 4, page 577-587 XP002038410 ISSN: 0006-3363 abstract --- -/--	1,3



Further documents are listed in the continuation of box C



Patent family members are listed in annex

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

15 November 1999

Date of mailing of the international search report

29/11/1999

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# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/CA 99/00437

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	BERUBE B. ET AL: "Inhibition of in vivo fertilization by active immunization of male hamsters against a 26-kDa sperm glycoprotein" BIOLOGY OF REPRODUCTION, vol. 51, 1994, pages 1255-1263. XP002122660 abstract	1,3
A	--- BOUE F ET AL: "SURFACE LOCALIZATION OF P34H, AN EPIDIDYMAL PROTEIN, DURING MATURATION, CAPACITATION, AND ACROSOME REACTION OF HUMAN SPERMATOZOA" BIOLOGY OF REPRODUCTION, US, ORLANDO, FL, vol. 54, no. 5, page 1009-1017 XP002038412 ISSN: 0006-3363 page 1011, "sperm protein extraction"	1-8
A	--- US 5 753 231 A (HERR JOHN C ET AL) 19 May 1998 (1998-05-19)	1-3
A	--- US 5 756 299 A (GOLI SURYA K ET AL) 26 May 1998 (1998-05-26) -----	

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA 99/00437

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
Remark: Although claims 1 and 2 are directed to a method of treatment of the human body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 99/00437

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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